

### **Remarks**

By this Amendment, Applicants have corrected a typographical error in the specification and have added new claims 31-41. The Examiner's rejections in the Office Action mailed on July 20, 2004 are addressed below in the order raised in the Office Action.

### **Specification**

The paragraph beginning on page 11, line 19 and ending on page 12, line 12 is replaced to correct a typographical error. Specifically, on page 12, line 10 the letters "asuch" are replaced with "such". Applicants submit that this error is clearly a typographical error, and no new matter has been added by this correction.

### **The 35 U.S.C. § 102 Rejections**

The Examiner has rejected claims 1-3, 6 and 8-19 under 35 U.S.C. 102(e) as being unpatentable over Fernandes (U.S. Pat. No. 4,904,996). (Applicants note that while the Examiner has referred to 35 U.S.C. 103(a), in paragraph 2 of the Office Action, the Examiner confirmed by telephone that the rejection is based upon 102(e).)

### **Independent Claim 1**

Fernandes does not teach or suggest a target as recited in independent claim 1. The Examiner relies upon the obstruction 15 in Figure 2 of Fernandes as teaching a target. This obstruction is a conductor support that attaches the cable to the tower structure, which holds the length of cable above the ground. Since the operation of the device taught by Fernandes is completely different from the claimed invention, such a conductor support is not a target as recited in independent claim 1.

The specification of the present invention describes the target as an object in the field of view so that it can be used in image processing to determine the position of the transmission line or cable and changes to that position. Further, the target as described in the present invention is associated with the cable or that portion being monitored and must be able to move with the cable. Otherwise, a target that is fixed relative to the ground would not move and would appear to be in the same position in each frame or picture. Upon comparing such frames or pictures, the target would not have moved and would fail to provide any

information about the movement or change in position of the cable. In other words, the conductor support of Fernandes is fixedly attached to the tower structure, which, in turn, is fixedly attached to the ground. Since the conductor support does not move relative to the ground, its position will never change, and it will not yield any information about changes in the position of the cable. To the contrary, the target of the present invention moves with the cable or transmission line and is used, therefore, to determine a change in the position of the cable or transmission line. Fernandes does not teach or suggest a target as recited in independent claim 1, and Applicants request withdrawal of this rejection as to claim 1 and as to claims dependent therefrom, including claims 2-3, 6 and 8-18.

#### Independent Claim 19

Regarding claim 19, the Examiner contends that Fernandes teaches a computer processor *mounted within the same housing as the video camera* that analyzes video images to determine *a change in the position of the target*. For this, the Examiner cites to the on-board microprocessors of the video cameras and to the microprocessor control system 100. *Fernandes*, col. 3, lines 4-6 and Figure 4.

With regard to the on-board microprocessors of the video cameras, Fernandes does not teach or suggest that these on-board microprocessors are able to analyze video images to determine *a change* in the position of a target.

With regard to the microprocessor control system 100 in Figure 4 of *Frenandes*, this control system is not mounted within the same housing as the video camera. In reference to this control system 100, Fernandes states that “identical [control] systems are included in both the forward and rear propulsion modules.” *Fernandes*, col. 7, lines 7-9. The video camera of Fernandes, however, is located in a housing that is physically separate from the propulsion modules. In connection with Figure 1, Fernandes states: “There are three main components of the energized conductor mounted, robot-RPV 16, namely forward propulsion module 18, payload subsystem module 20 carrying video imaging, . . . 22; and rear propulsion module 24 . . . .” *Fernandes*, col. 4, lines 25-29. As shown in Figures 1 and 2, the housing for each of these three components are physically separate from one another—even the payload subsystem module 20 consists of two housings that are physically separate: the module 20 that is directly connected to each of the forward and rear propulsion modules and the sphere 22 carrying the video imaging equipment. As the housings for each of these components are physically separate, the microprocessor control system located in the

propulsion modules cannot be construed as being housed within the payload subsystem module that carries the video equipment. (Applicants also submit that the on-board microprocessors described in column 3, line 4-6 of Fernandes are not the same as the control system 100 of Fernandes, since the on-board microprocessors appear to be “on-board” with the video equipment, while the control system 100 clearly resides within the propulsion modules.)

Further, the control system 100 does not determine *a change in the position of a target* as recited in independent claim 19. The Examiner cites to column 4, lines 34-40 and column 6, lines 37-59 as support for a microprocessor mounted within the same housing as the video camera for analyzing video images of a target and determining a change in the position of the target. The first of these citations (column 4, lines 34-40) refers to a mobile ground control station. Even assuming, *arguendo*, that this control station contained a microprocessor that could determine a change in the position of a target, it is clearly not housed within the same housing as the video camera.

The second of these citations (column 6, lines 37-59) state that the video camera is trained on the conductor and that it is operated from the ground control unit. This citation also states that the operator can control zoom, pan and tilt functions to obtain panoramic views of the right of way for tree trimming and shrub control purposes. None of these statements can be construed as teaching or suggesting a microprocessor for determining a change in the position of a cable.

This second citation also states that infra-red data on conductor hot-spots can be superimposed on the video imagery for spatial correlation of data. While this passage is vague, at best it means that the hot-spot data is being spatial correlated to the image data of the conductor to determine where along the conductor the hot-spots are physically located. It is not being used to determine a change in the position of the conductor itself. Again, even assuming, *arguendo*, this statement in Fernandes were construed as teaching a processor for determining a change in the position of a cable, such processor is located in the ground control unit and not within the same housing as the video camera.

The Examiner next cites to column 6, lines 51-59 as teaching the storing of the position and a time value. Applicants can find no reference, teaching or suggestion in Fernandes to a data storage device that stores the position of the cable along with a time value.

Moreover, for the same reasons discussed above in connection with claim 1, Fernandes does not teach or suggest a target as recited in independent claim 19. Therefore, Applicants believe independent claim 19 is in condition for allowance and request withdrawal of the above rejections.

### **The 35 U.S.C. § 103(a) Rejection**

The Examiner has rejected claims 4-5 and 7 under 35 U.S.C. 103(a) as being unpatentable over Fernandes as applied to claims 1-3, 6 and 8-19 in view of Brown (U.S. Pat. No. 6,229,451). To make a prima facie case of obviousness, the references in combination must show each and every element of the claim, illustrate a motivation to combine the references, and illustrate an expectation of success in their combination. Applicants assert that there is no motivation present to combine the teachings of Fernandes and Brown and that one of skill in the art would have no expectation of success in their combination.

First, the device taught by Fernandes travels along the conductor wire. *Fernandes*, Figure 1; col. 2, lines 19-23. In fact, the robot of Fernandes is capable of moving past obstructions along the conductor, such as conductor support structures. *Id* at lines 34-38. Brown teaches a reflector attached at a predetermined location along a conductor. *Brown*, col. 4, lines 35-37. Since the robot of Fernandes as it travels along the conductor would simply run over and pass by the reflector attached at a given location along the conductor as taught by Brown, the reflector of Brown would be of limited, if any, use in the device of Fernandes. Therefore, one of skill in the art would not be motivated to combine these references, nor would there be an expectation of success in using a reflector as taught by Brown with the traveling robot of Fernandes.

With regard to claim 7, the Examiner concludes that a reflective target is inherently self-illuminating. This is not correct since a reflector only reflects light that hits its surface. It does not generate and send light itself and, therefore, is not self-illuminating.

In addition, based on the arguments above as to the failure of Fernandes to teach or suggest each and every element of independent claim 1, and since claims 4-5 and 7 are dependent upon claim 1, Applicants believe that for this reason alone, claims 4-5 and 7 are allowable.

### **New Claims 31-41**

Applicants have added new independent claim 31 and dependent claims 32-41, which all depend from independent claim 31. Independent claim 31 recites a stationary

imaging device, whereas the video equipment in Fernandes is attached to a device that traverses along a power line. Independent claim 31 also recites that the target is fixedly attached to the cable. Fernandes, as discussed above, does not teach or suggest a target or a target that is fixedly attached to a cable. Independent claim 31 also recites that the computer processor is for analyzing images of the target associated with a cable to determine a position of the cable relative to a previous position of the cable. Fernandes does not teach or suggest a computer processor that analyzes images to determine a position of a cable relative to a previous position of the cable. Therefore, independent claim 31 and all of the claims dependent therefrom are in condition for allowance.

### **Conclusion**

In view of the above considerations, Applicants respectfully request a timely Notice of Allowance in this application. The Examiner is invited to call the undersigned attorney if a telephone call could help resolve any remaining items.

At this time, Applicants believe that no other fees are due other than those authorized in the concurrent submissions herewith. However, please charge any additional required fee to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310 (order no. 060825-245 US). A copy of this sheet is enclosed.

Date: October 18, 2004

By: \_\_\_\_\_

Respectfully submitted,



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